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EXAMINER

VARTANIAN, HARRY

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 01/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/718,985

Applicant(s)

TSAUR, LIH-FENG

Examiner

Harry Vartanian

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 November 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 11-13 is/are rejected.
- 7) ☒ Claim(s) 7-10 and 14-17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 November 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**Detailed Action**

***Specification***

1. 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms which are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are: Please be consistent in using subscripts when declaring symbols. For instance, on pg 17 line 14,  $p_t+1$  is used to describe a symbol, when it should be  $p_{(t+1)}$ . Please check entire document for consistency and make any appropriate corrections.

***Claim Objections***

2. Claim 1 recites the limitation "the transmitters" in line 9. There is insufficient antecedent basis for this limitation in the claim.

3. Claim 4 recites the limitation "the rate" in line 15. Is this the symbol rate or data rate? Please be more specific. There is insufficient antecedent basis for this limitation in the claim.

4. Claim 4 recites the limitation "the signal points" in line 14. The previous sentence discloses a plurality of ***symbol points, not signal.*** There is insufficient antecedent basis for this limitation in the claim. Please clarify in Line 20 also.

5. Claim 11 recites the limitation "the rate" in line 15. Is this the symbol rate or data rate? There is insufficient antecedent basis for this limitation in the claim.

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6. Claim 11 recites the limitation "the signal points" in line 5. The previous sentence discloses a plurality of ***symbol points, not signal***. There is insufficient antecedent basis for this limitation in the claim. Please clarify in Line 11 also.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 8 and 15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It is unclear in step (e) why the symbol rate is changed, increased in this case, when the symbols  $p_t$  and  $p_{(t+1)}$  are correlated? In figure 11 it is shown that the rate remains the same(1100) or goes to block 1200 which decreases the rate to  $q/2$ . The claimed subject matter must be described in the specifications. Please clarify.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claim 8 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: what is the definition of  $p'_{t+1}$ ? The variable  $p'_t$  is clearly defined in both Claims, but it is uncertain into what  $p'_{t+1}$  is.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 1-6 and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harris et al (US Patent #6400755) in view of Hayata(US Patent #6,658,076). Regarding Claim 1, Harris et al discloses a OVSF communication system that uses adaptive spreading rate adjustment in order to increase overall throughput and performance(See Abstract). Harris describes the method of orthogonally encoding data at a certain spreading rate(Column 2, Lines 5-49) and adjusting the spreading rate in order to reach a maximum allowable data rate. Moreover, regarding the limitation **"each packet having a plurality of symbols having signal points in a field"** is well known feature of modulation schemes like QPSK, QAM, etc. Regarding the limitation **"data being further encoded such that only orthogonal descendants of a selected maximum rate code are used for one of the transmitters communicating with a selected receiver"**, it is an

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inherent feature of the 3-G OVSF standard to only use codes within the same parent-child tree per transmitter since it ensures that the code will not be correlated with any other transmitting codes.

Harris et al fails to meet the following limitation of Claim 1 regarding the detection of a change in the frame spreading rate based on the correlation, or miscorrelation, of successive frames.

However, Hayata discloses in his symbol rate detection receiver the following:

...Spread spectrum signals are transmitted at a symbol rate which is selected from a plurality of predetermined symbol rates so that the symbol rate selected for a given frame may differ from the rate used in another frame. No information is transmitted to receivers regarding the transmitted symbol rate. Rather, it is up to the receivers to determine the transmitted symbol rate. This mode of transmission is called blind-rate transmission.

In the current blind-rate transmission where two symbol rates are used, the transmitted spread spectrum signal is correlated, at a receive site, with a PN code sequence that corresponds to the high symbol rate to produce a first despread signal and the despread signal is decoded and tested for error. If an error is detected, a second despread signal is produced corresponding to the lower symbol rate and decoded and tested again. If an error is detected again, an alarm is given. Since the transmitted symbol rate is unknown, the receiver would frequently attempt to repeat the decoding process whenever the transmitted symbol rate varies from **one frame to another....(Column 1, Lines 17-50)**

Therefor, the use of correlation to determine an unknown symbol rates is a common method used in blind rate adaptation. It would have been prima facie obvious to those skilled in the art at the time of invention to use correlation of successive frames as a method for detecting symbol rate in an OVSF communication system. The motivation to combine Harris et al system with the method disclosed by Hayata is that the use of blind adaptation can increase overall channel throughput since the transmittal of control information is not needed everytime a symbol rate changes.

Regarding Claim 2, since the limitations are identical to Claim 1 the same argument made above also applies.

Regarding Claim 3, since the limitations are essentially identical to Claim 1 the same argument made above also applies.

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Regarding Claim 4, since the limitations are essentially identical to Claim 1 the same argument made above also applies. (Regarding the use of an antenna, please see Harris et al fig 1)

Regarding Claims 5-6 and 12-13, Hayata discloses in fig 2 and fig 4 that the symbol rate is either increased(202) or decreased(207) based on the estimated change detected by a controller in the receiver(Column 4, Line 51 to Column 5, Line 42).

Regarding Claim 11, the limitations have been met in the above paragraphs.

### ***Allowable Subject Matter***

10. Claims 7-10, 14-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Please consider the following documents in their entirety:

US Patent# 6,463,097 (particularly the ***Object and Summary of Invention*** section)

US Patent# 6,466,566

US Patent# 6,574,289

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry Vartanian whose telephone number is 703.305.8698. The examiner can normally be reached on 9-5:30 Mondays to Fridays.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703.305.4714. The fax phone number for the organization where this application or proceeding is assigned is 703.872.9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is NONE.

Harry Vartanian  
Examiner  
Art Unit 2634

HV



STEPHEN CHIN  
SUPERVISORY PATENT EXAMINE  
TECHNOLOGY CENTER 2600